AMENDMENTS TO THE CLAIMS

1. **(Currently amended)** A method of controlling the flow of a liquid in a flow system, the liquid flow comprising particles and being led into a channel thereof, the method comprising the steps of:

- enveloping the liquid flow by a flow of carrier liquid (2),
- hydrodynamically focussing the particles in the liquid flow,
- providing a measurement signal of the liquid flow from an observation area (4) in the channel, and
- dividing the liquid flow at a branching point (7) into two or more outlets in response to said measurement signal,
- wherein said division of the liquid comprises:
- introducing a control liquid from at least one control channel (5,6) at a ~~merging point (30) or~~ merging area (31) in the channel, the amount of said control liquid being controlled by at least one electro-kinetic pump, the pump effect of which is controlled in response to the measurement signal.

2. **(Original)** The method according to claim 1 wherein the electro-kinetic pumps are of the electro-osmotic type which consist of two capillary structures to which an electrical field is applied, so that when the field in the one capillary structure is increased, the field in the other capillary structure is correspondingly reduced.

3. **(Currently amended)** The method according to claim 2 wherein the electrical fields are controlled~~, e.g. in the ratio of 1:5,~~ to bring about a liquid flow from the central channel in such a manner that the particles in the liquid flow are controlled in dependence of the fields.

4. **(Original)** The method according to claim 1 wherein the amount of control liquid is controlled by just one electro-kinetic pump, which is placed in the one of the channels (5,6).

5. **(Original)** The method according to claim 1 wherein the flow is divided in two or more outlets after the branching point, whereby the particles are sorted in accordance with their position at the branching point.

6. **(Original)** The method according to claim 2 wherein the capillary structures have a cross-section, which varies between 0.00005 mm^2 and 1.00000 mm^2.

7. **(Original)** The method according to claim 1 wherein the pump effect is controlled on the basis of measurement signals which are generated in an observation area which lies upstream said merging point for said control liquids.

8. **(Currently amended)** The method according to claim 1 wherein the flow system is ~~conFigured~~configured in a monolithic manner with integrated pumps or by connection of separate pumps.

9. (**Original**) A flow system with controlled flow of a particle-containing liquid, the flow system comprising:

(a) a channel for leading a flow of the particle-containing liquid (1) to be controlled;

(b) a carrier-liquid enveloping means for enveloping the flow of particle-containing liquid in a carrier liquid (2) in the channel so that the particles are hydrodynamically focussed in the flow of particle-containing liquid to flow in an individual manner;

(c) an observation area (4) in the channel;

(d) a measuring equipment for providing a measurement signal of the flow of particle-containing liquid in the observation area; and

(e) a branching point (7) for dividing the flow of particle-containing liquid into two or more outlets (8,9) in response to the measurement signal;

the system further comprising:

(f) a merging point (30), or merging area (31) for introducing a control liquid into the channel from at least one control channel (5,6), and

(g) at least one electro-kinetic pump (11,12,13) for controlling the amount of said control liquid from said at least one control channel; said control of the amount of control liquid being controlled by controlling the pump effect of said at least one electro-kinetic pump in response to the measurement signal.

10. **(Original)** The system according to claim 9 wherein said at least one electro-kinetic pump is of an electro-osmotic type consisting of two capillary structures to each of which an electrical field is applied, so that when the field in the one capillary structure is increased, the field in the other capillary structure is correspondingly reduced.

11. **(Currently amended)** The system according to claim 9 wherein the electrical fields are controlled~~, e.g. in the ratio of 1:5,~~ to bring about a liquid flow from the central channel in such a manner that the particles in the liquid flow are controlled in dependence of the fields.

12. **(Original)** The system according to claim 9 wherein the amount of control liquid is controlled by just one electro-kinetic pump, which is placed in the one of the channels (5,6).

13. **(Original)** The system according to claim 9 wherein the flow is divided in two or more outlets after the branching point, whereby the particles are sorted in accordance with their position at the branching point.

14. **(Original)** The system according to claims 10 wherein the capillary structures have a cross-section, which varies between 0.00005 mm^2 and 1.00000 mm^2.

15. **(Original)** The system according to claim 9 wherein said pump effect is controlled on the basis of measurement signals which are generated in an observation area which lies upstream said merging point for said control liquids.

16. **(Currently amended)** The system according to claim 9 wherein the flow system is ~~conFigured~~configured in a monolithic manner with integrated pumps or by connection of separate pumps.

17. **(New)** The method according to claim 3 wherein the electrical fields are controlled in the ratio of 1:5.

18. **(New)** The system according to claim 11 wherein the electrical fields are controlled in the ratio of 1:5.